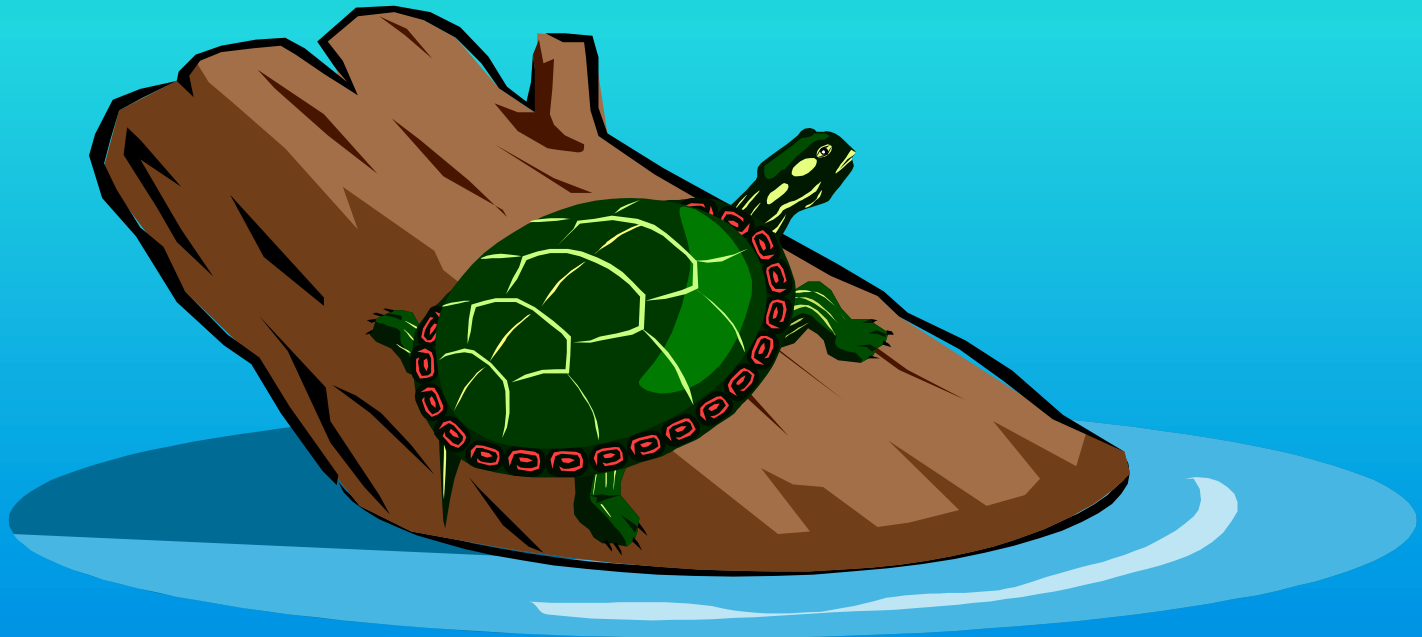


# AQUATIC ECOLOGY



District of Columbia  
Fisheries and Wildlife Division

# Aquatic Ecology

What is aquatic ecology?

The study of the relationship of organisms with other organisms and non-living factors in an environment of water.



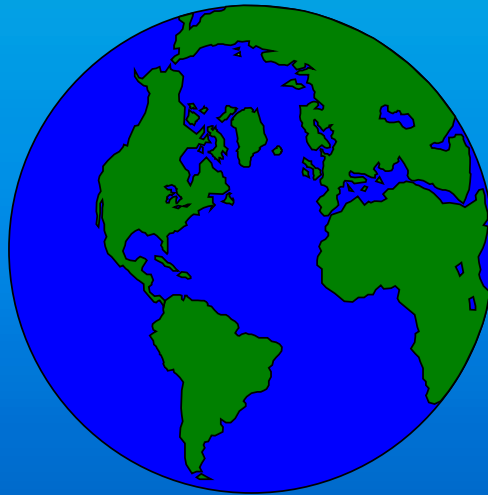
# Importance of Water

Why is water important?

Necessary for life.

What percent of the planet's surface does water occupy?

About 70%

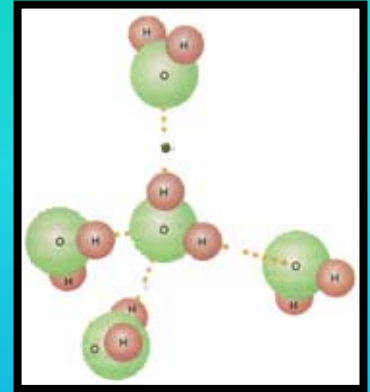


# Properties of Water

States of water?

Liquid, gas or solid

The water molecule:



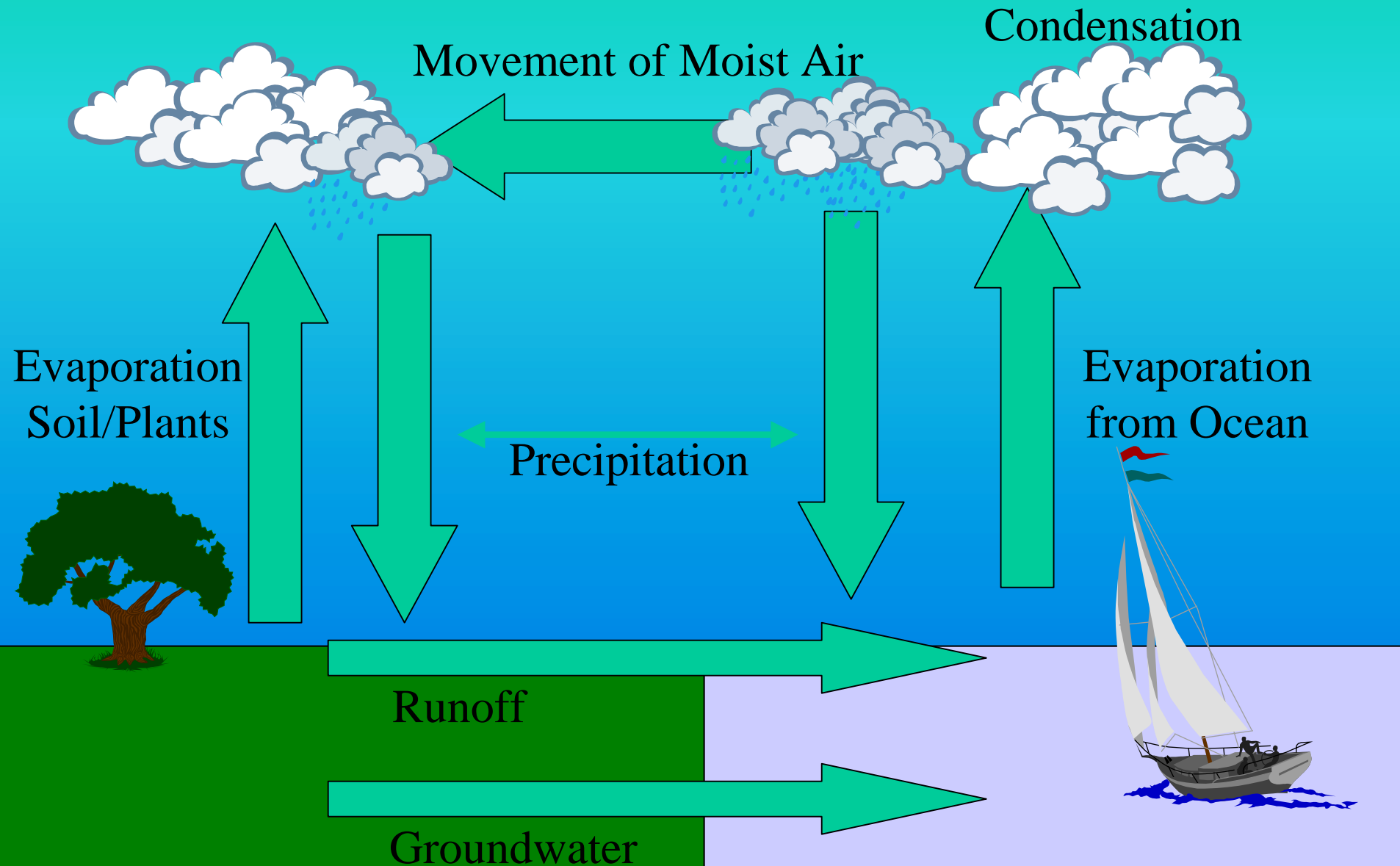
One atom of oxygen and two Hydrogen atoms. The two hydrogen atoms form an angle of 105 degrees with the oxygen. It is this arrangement that gives water some of its unusual properties.

# Properties of Water

## Biologically important properties of water:

- 1.) High Boiling Point allows water to exist as a liquid at the Earth surface temperature.
- 2.) High Freezing Point allows water to exist as a liquid at the Earth surface temperature.
- 3.) High Surface Tension important for organisms that live on the water's surface.
- 4.) Density is unique among solids, this allows ice to float.
- 5.) Universal solvent, water dissolves more substances in greater amounts than any other liquid.

# Water Cycle



# Types of Water

What are the three types of water?

## 1.) FRESHWATER:

Contains little or no salt.  $<.05$  ppt

## 2.) BRACKISH:

Contains little to moderate amounts of salt.  $.05 - 30$  ppt

## 3.) SALTWATER:

Contains on average 33 ppt salt.

# Aquatic Habitats

## What is an Aquatic Habitat?

These are places where water is found in natural environments and where aquatic organisms live.

## Types of Aquatic Habitats

- 1.) Lakes and Ponds: Lentic, enclosed by land.
- 2.) Rivers and Streams: Lotic, flow into larger systems.
- 3.) Estuaries: Brackish systems.
- 4.) Wetlands: Marshes, swamps, bogs and others.
- 5.) Oceans: Vast marine bodies covering most of the Earth.



# Aquatic Organisms

What animals live in aquatic habitats?

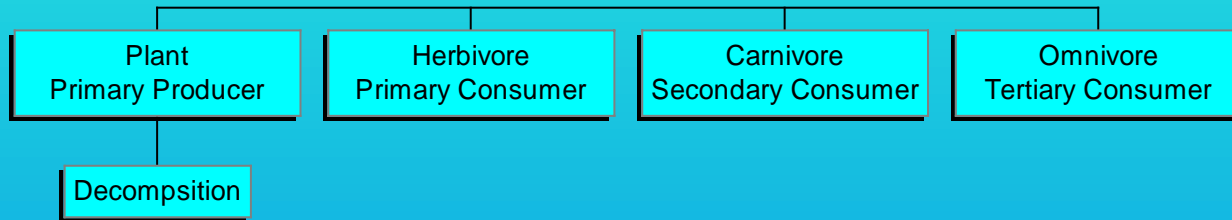


What type of plants live in aquatic habitats?

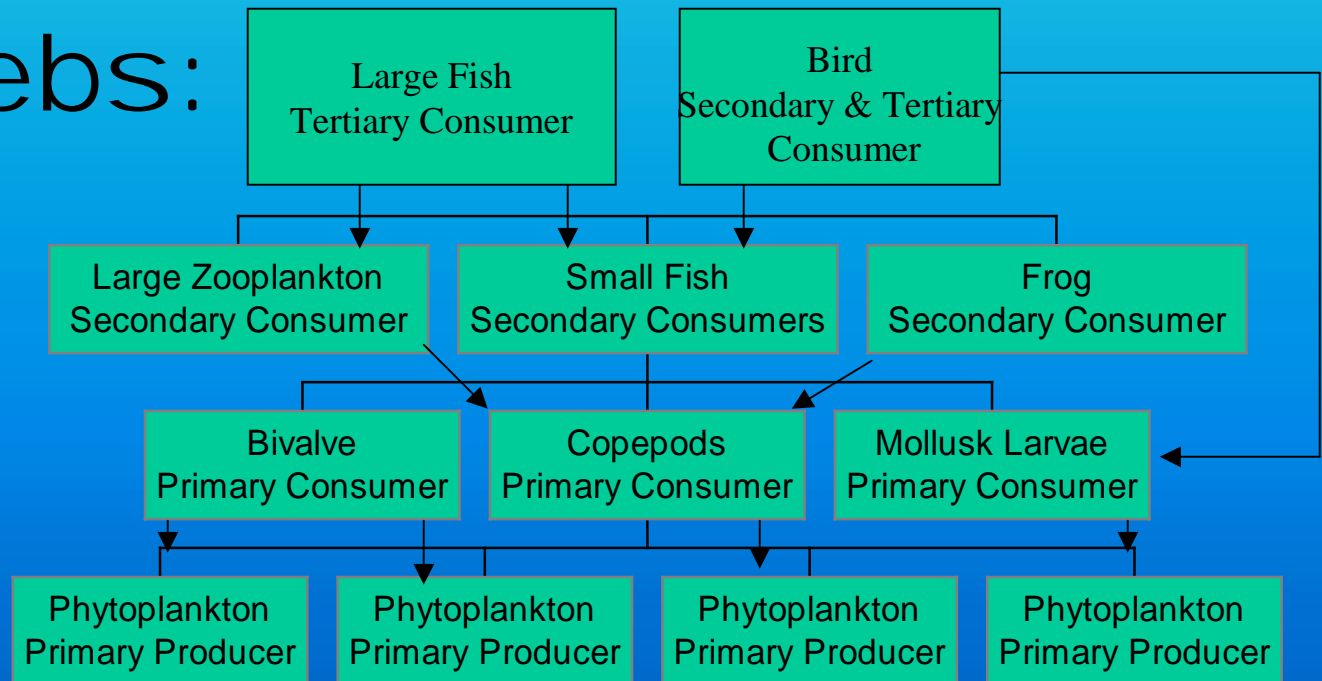


# Food

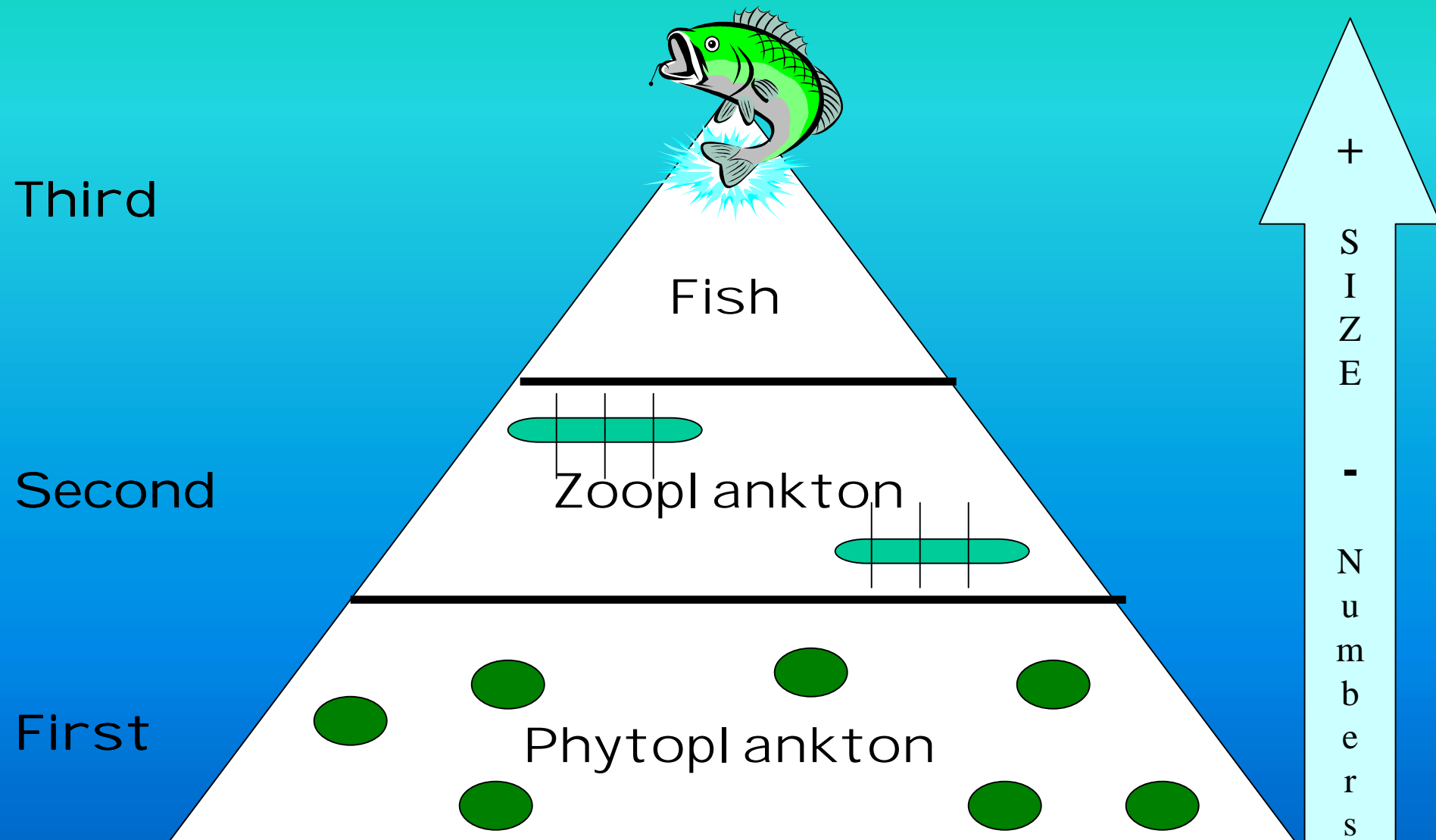
## Food Chains:



## Food Webs:

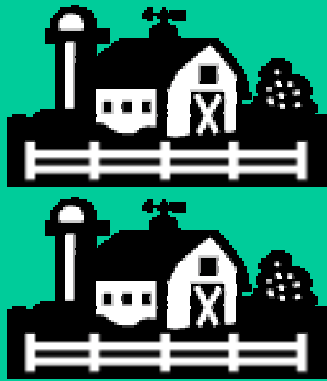


# Trophic Pyramid



# Pollution

**Pollution:** Anything that spoils the cleanliness, purity or overall quality of our water.



**Point Source**

**Non-Point Source**

# Pollution

What are common types of pollutants?

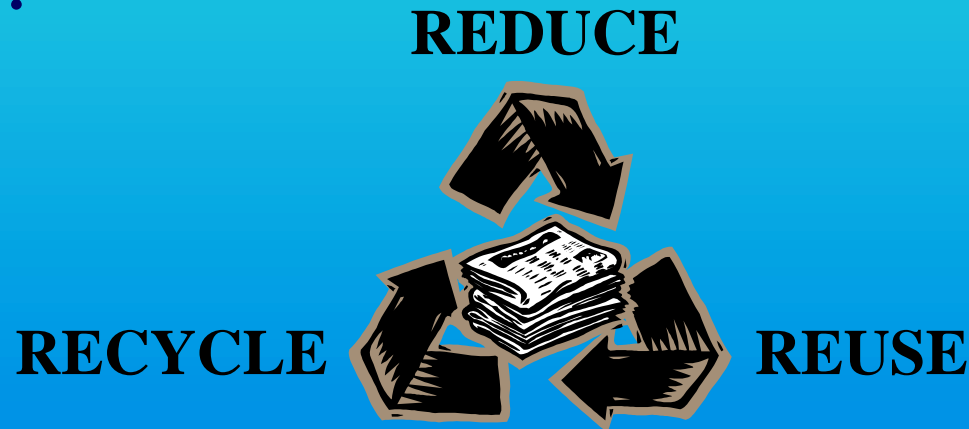
- Silt and Sediment
- Agricultural Waste
- Industrial Waste
- Sewage
- Trash
- Petroleum Products
- Acid Rain
- Nuisance Species



# Conservation

What is Conservation?

The wise usage and care of any natural resource.



Ethics:

Should always practice a good set of moral principles or values.